

WHAT IS CLAIMED IS:

1. A transmission circuit comprising:

modulated signal generating means for generating a modulated signal including a phase component and an amplitude component;

5 a modulated signal line for transmitting the modulated signal, the modulated signal line being connected to the modulated signal generating means;

modulated signal detecting means for detecting at least the amplitude component of the modulated signal generated by the modulated signal generating means, the modulated signal detecting means being connected to the modulated signal line;

10 an amplitude component line for transmitting the amplitude component of the modulated signal, the amplitude component line being connected to the modulated signal detecting means;

threshold value inputting means for inputting a threshold value for switching a method for modulating the modulated signal; and

15 judging means for judging whether or not an amplitude value of the amplitude component of the modulated signal is larger than the threshold value input from the threshold value inputting means, the judging means being connected to the amplitude component line.

20 2. The transmission circuit of claim 1, wherein the threshold value is set at a value corresponding to a boundary between a region in which a signal to be transmitted exhibits a linear response and a region in which the signal exhibits a nonlinear response.

3. The transmission circuit of claim 1, wherein the modulated signal detecting
25 means also detects the phase component of the modulated signal, and

the transmission circuit further comprises:

a phase component line for transmitting the phase component of the modulated signal, the phase component line being connected to the modulated signal detecting means;

a constant-voltage supply line for supplying a constant voltage;

5 first selection outputting means for outputting the modulated signal if the amplitude value of the amplitude component is smaller than or equal to the threshold value, while outputting the phase component if the amplitude value of the amplitude component is larger than the threshold value, based on a judgment result of the judging means, the first selection outputting means being connected to the modulated signal line and the phase
10 component line; and

second selection outputting means for outputting the constant voltage if the amplitude value of the amplitude component is smaller than or equal to the threshold value, while outputting the amplitude component if the amplitude value of the amplitude component is larger than the threshold value, based on the judgment result of the judging
15 means, the second selection outputting means being connected to the amplitude component line and the constant-voltage supply line.

4. The transmission circuit of claim 3, further comprising DC-to-DC converting means for performing voltage conversion on an output signal from the second selection
20 outputting means, the DC-to-DC converting means being connected to the second selection outputting means.

5. The transmission circuit of claim 4, further comprising an RF power amplifier including an RF input terminal connected to the first selection outputting means and a
25 power-supply-voltage terminal connected to the DC-to-DC converting means.

6. The transmission circuit of claim 5, further comprising means for specifying the level of output power to the modulated signal generating means.

5 7. The transmission circuit of claim 5, further comprising frequency converting means disposed between the first selection outputting means and the RF power amplifier.

8. The transmission circuit of claim 1, further comprising:
a constant-voltage supply line for supplying a constant voltage; and
10 selection outputting means for outputting the constant voltage if the amplitude value of the amplitude component is smaller than or equal to the threshold value, while outputting the amplitude component if the amplitude value of the amplitude component is larger than the threshold value, based on a judgment result of the judging means, the selection outputting means being connected to the amplitude component line and the
15 constant-voltage supply line;

9. The transmission circuit of claim 8, further comprising:
first DC-to-DC converting means for performing voltage conversion on the amplitude component, the first DC-to-DC converting means being disposed on the
20 amplitude component line between the modulated signal detecting means and the selection outputting means; and
second DC-to-DC converting means interposed in the constant-voltage supply line.

10. The transmission circuit of claim 8, further comprising DC-to-DC converting
25 means for performing voltage conversion on an output signal from the selection outputting

means, the DC-to-DC converting means being connected to the selection outputting means.

11. The transmission circuit of claim 8, further comprising an RF power amplifier including an RF input terminal connected to the modulated signal line and a power-supply-
5 voltage terminal connected to the selection outputting means.

12. The transmission circuit of claim 11, further comprising frequency converting means disposed between the first selection outputting means and the RF power amplifier.

10 13. The transmission circuit of claim 1, wherein the threshold value inputting means is storage means for storing the threshold value, and
the judging means performs the judgment using the threshold value stored in the storage means.